R E P O R T R E S U M E S

ED 003 280 24

THE CORRELATION OF AWARENESS OF STRUCTURAL RELATIONSHIPS IN ENGLISH AND ABILITY IN WRITTEN COMPOSITION.

BY- O'DONNEL, ROY C.
MOUNT OLIVE JUNIOR COLLEGE, N. C.

REPORT NUMBER CRP-1524 PUB DATE 63
EDRS PRICE MF-$0.09 HC-$2.04 51P.

DESCRIPTORS- WRITING SKILLS, *GRAMMAR, CREATIVE WRITING, *LINGUISTICS, *LANGUAGE ABILITY, *COMPOSITION SKILLS (LITERARY), ENGLISH INSTRUCTION, *TESTS, IOWA GRAMMAR INFORMATION TEST, STEP ESSAY TEST, SCHOOL AND COLLEGE ABILITY TESTS, MOUNT OLIVE, NORTH CAROLINA

THIS STUDY HYPOTHESIZED THAT (1) THERE IS A STATISTICALLY SIGNIFICANT CORRELATION BETWEEN ABILITY IN WRITTEN COMPOSITION AND AWARENESS OF STRUCTURAL RELATIONSHIPS IN ENGLISH, AND (2) THIS CORRELATION IS SIGNIFICANTLY DIFFERENT FROM THE CORRELATION BETWEEN ABILITY IN WRITTEN COMPOSITION AND ABILITY TO VERBALIZE KNOWLEDGE OF RULES AND TERMINOLOGY OF TRADITIONAL ENGLISH GRAMMAR. THE SAMPLE USED IN THE STUDY WAS APPROXIMATELY 200 COLLEGE FRESHMEN. DATA WERE GATHERED FROM THE IOWA GRAMMAR INFORMATION TEST, STEP ESSAY TEST, SCHOOL AND COLLEGE ABILITY TESTS, AND A TEST DESIGNED BY THE INVESTIGATOR TO MEASURE THE RECOGNITION OF STRUCTURAL RELATIONSHIPS IN ENGLISH. SIGNIFICANT DIFFERENCES WERE NOT FOUND. (JM)

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

THE CORRELATION OF AWARENESS OF STRUCTURAL RELATIONSHIPS IN ENGLISH AND ABILITY IN WRITTEN COMPOSITION

Cooperative Research Project No. 1524

by

Roy C. O'Donnell

Mount Olive College

Mount Olive, North Carolina

1963

The research reported herein was supported by the Cooperative Research Program of the Office of Education, United States Department of Health, Education, and Welfare.

ED 003280

ACKNOWLEDGEMENTS

The writer gratefully acknowledges his indebtedness to the people whose cooperation made this study possible. President W. Burkette Raper and the students of Mount Olive College willingly cooperated in making possible the gathering of data, and Miss Margaret Turner efficiently performed the secretarial work involved in the project.

Dr. Thomas Donnelly of the University of North Carolina made the facilities of the Computation Center at Chapel Hill available to the project. Mrs. Anne F. Law, English teacher at College High School, Bowling Green, Kentucky, and Mrs. Edith Vann, English teacher at North Duplin High School, Calypso, North Carolina, read the essay tests employed in the study.

Dr. William J. Griffin and Dr. Raymond C. Norris of George Peabody College, Nashville, Tennessee, and Dr. Howard F. Hjelm of the Education Division, Pan American Union, Washington, D. C., served as consultants. They offered valuable assistance in interpreting the data and in shaping the report, but the writer accepts responsibility for the final report and any shortcomings it may have.

The Cooperative Research program of the Office of Education, United States Department of Health, Education, and Welfare provided funds for the project, and Dr. Edwin Hindsman, Research Coordinator, offered valuable suggestions concerning the project after the initial proposal had been approved.

TABLE OF CONTENTS

Chapter		Page
I.	THE PROBLEM AND OBJECTIVES OF THE STUDY.	1
	The Problem.	1
	Importance of the Study.	2
	Definition of Terms.	3
	Delimitation of the Study.	4
	Objectives	5
II.	REVIEW OF RELATED RESEARCH	6
III.	DESCRIPTION OF TESTS AND PROCEDURES.	9
	Description of Tests	9
	Description of Sample and Procedure.	16
IV.	FINDINGS, CONCLUSIONS, AND IMPLICATIONS.	19
	Presentation and Interpretation of Findings.	19
	Conclusions.	23
	Implications and Recommendations for Further Study	23
APPENDIX		29
BIBLIOGRAPHY		43

LIST OF TABLES

Table — Page

I. Correlations of STEP Essay Test Scores with Iowa Grammar Information Test Scores and with "Test of Recognition of Structural Relationships in English" Scores for Freshmen Students Entering Mount Olive College in 1961 and in 1962. . . . 20

II. Correlations of STEP Essay Test Scores with Iowa Grammar Information Test Scores and with "Test of Recognition of Structural Relationships in English" Scores for 201 Mount Olive College Freshmen Reported According to Sex 21

III. Correlations of STEP Essay Test Scores with Iowa Grammar Information Test Scores and with "Test of Recognition of Structural Relationships in English" Scores for 197 Mount Olive College Freshmen Reported According to Level of Ability as Indicated by SCAT Scores, Using National Norms. . . . 22

IV. Intercorrelations of Scores on Cooperative School and College Ability Tests; Cooperative Sequential Tests of Educational Progress, Essay; "Test of Recognition of Structural Relationships in English"; and Iowa Grammar Information Test for 197 Mount Olive College Students. 30

CHAPTER I

THE PROBLEM AND OBJECTIVES OF THE STUDY

For many years educators have held different opinions regarding the relationship between knowledge of English grammar and ability in written composition. Those who have insisted that the two are closely related have done so without adequate statistical evidence, and those who have denied the existence of any significant relationships between the two have done so on the basis of evidence which may be questioned. Although experimental studies have been made to investigate the relationship between grammar and written composition, the investigators have not clearly distinguished the essentials of grammatical structure from conventions of language usage and ability to verbalize rules of grammar. Consequently, the results of their studies have not provided conclusive evidence concerning the value of knowledge of grammatical structure.

The Problem

The specific question with which this research project is concerned is whether the correlation between ability in written composition and awareness of syntactic relationships of words in sentences is different from that between ability in written composition and ability to verbalize knowledge of rules and terminology of traditional English grammar. For purposes of this study, it was hypothesized that there is a statistically significant correlation between ability in written composition and awareness of structural relationships in English, and that this correlation is significantly different from the correlation

between ability in written composition and ability to verbalize knowledge of rules and terminology of traditional English grammar.

Importance of the Study

English grammar has generally been taught on the assumption that mastery of grammar is essential to the student who expects to achieve skill in written composition. Although studies investigating this assumption have produced negative findings, the question of what degree of relationship exists between grammar and writing ability is by no means settled.

In the light of studies indicating a low correlation between knowledge of grammar and skill in using the language, many educators have felt that formal grammar instruction is not justifiable. In recent years, however, students of structural linguistics have demanded a re-evaluation of the importance of grammar. They have asserted that knowledge of traditional grammar is of little value because the traditional grammar course inadequately and sometimes inaccurately represents the essentials of the structure of the English language. Charles C. Fries assumes that there is an undoubted relationship between knowledge of grammatical structure, properly identified, and competence in reading and writing English.[1] However, he does not cite any objective evidence to support his assumption.

---

1. Charles C. Fries, The Structure of English (New York: Harcourt, Brace and Company, 1952), p. 278.

If it is true that traditional grammar inadequately describes the structure of the language, it is understandable that there is not a high correlation between knowledge gained in the grammar course and ability to use the language effectively in writing. It is only to the extent that the traditional grammar course does adequately and accurately represent the essentials of the language that it could be expected to be related to efficiency in using the language. Moreover, tests designed to measure the degree of mastery of traditional grammar would not give conclusive proof that knowledge of grammatical structure is unrelated to skill in writing. There is a definite need, therefore, for a study using testing techniques which will measure awareness of basic structural relationships in English apart from ability to verbalize knowledge of the terminology and rules of traditional English grammar.

Definition of Terms

In this study a distinction is drawn between grammar as it is understood and described by traditional grammarians and grammar as it is understood by students of structural linguistics. The type of grammar which developed in the eighteenth century under the influence of Latin grammar has traditionally been the chief concern of English grammar courses. This type of grammar is represented by the content of Kittredge and Farley's An Advanced English Grammar (New York: Ginn and Company, 1913), and is referred to in this study as "traditional English grammar."

As generally used in educational literature, "knowledge of grammar" apparently refers to conscious mastery of the content of the traditional

course in English grammar and ability to verbalize this knowledge. The term is used in that sense in this study.

As a result of scientific linguistic analysis, principles of grammatical structure have been formulated and stated in numerous publications such as Harold Whitehall's Structural Essentials of English (New York: The Ronald Press Company, 1958). "Awareness of structural relationships in English" and "awareness of syntactic relationships" are used interchangeably to refer to awareness of the operation of these structural principles of the English language.

Delimitation of the Study

This study is an investigation of the relationships existing between knowledge of grammar and written composition and between awareness of structural relationships and written composition only insofar as these relationships can be determined by use of tests. It is recognized that the validity of the data reported in this study depends upon the degree to which the tests employed in the study actually measure the variables in question.

Furthermore, the study is concerned with knowledge and abilities acquired by the participating students prior to the investigation. Although the literature of structural linguistics rather than that of traditional grammar was used in identifying basic structural relationships, no experimental teaching to compare relative effectiveness of different instructional approaches was involved in the study.

Objectives

The objectives of this study are stated as follows: (1) to measure the degree of relationship existing between ability in written composition and awareness of structural relationships of words in English sentences; (2) to measure the degree of relationship existing between ability in written composition and ability to verbalize knowledge of rules and terminology of traditional English grammar; (3) to test the hypothesis that the correlation between ability in written composition and awareness of structural relationships in English is different from that between ability in written composition and ability to verbalize knowledge of rules and terminology of traditional English grammar.

Data gathered from tests given to beginning college freshmen will be presented for total sample and for subsamples divided according to sex and level of scholastic ability.

CHAPTER II

REVIEW OF RELATED RESEARCH

The studies summarized in the following paragraphs may be considered representative of the several studies that have been made at various times, using students in various age groups, to investigate the relationship between knowledge of grammar and ability in written composition.

One of the earliest studies designed to discover the usefulness of teaching grammar was conducted by Franklin S. Hoyt in 1906.[1] Using two hundred students representing most of the elementary schools in Indianapolis, he tested the assumption that knowledge of grammar leads to the use of better English in oral and written expression. He found a probable true correlation between formal grammar and composition of .30. Louis W. Rapeer verified Hoyt's results by giving the same tests to students in Minneapolis schools.[2] Rapeer also found a probable true correlation between grammar and composition of .30.

In 1922 William Asker made a statistical comparison between knowledge of certain phases of formal grammar and ability in written composition.[3] Using the results of tests given to 295 entering freshmen at the University of Washington, Asker found a Pearson coefficient of correlation of .37 between grammatical knowledge and ability in composition.

---

1. Franklin S. Hoyt, "Grammar in the Elementary Curriculum," Teachers College Record, VIII (November, 1906), pp. 467-500.
2. Louis W. Rapeer, "The Problem of Formal Grammar in Elementary Education," Journal of Educational Psychology, IV (March, 1913), pp. 125-137.
3. William Asker, "Does Knowledge of Formal Grammar Function?" School and Society, XVIII (January 27, 1923), pp. 109-111.

An experiment conducted by J. D. Clark at North Carolina State College from 1930 to 1933 employed two different approaches to teaching written composition.[4] At the end of the experiment Clark reached the following conclusion: "An increase in readings, as co-ordinated units of form and thought, is conducive to greater development of language techniques than is formalized instruction about segments of language."

A study made by Ellen Frogner in 1939 was concerned with whether knowledge of grammar contributes to ability in sentence structure.[5] She also compared the relative effectiveness of two methods of teaching. In one group she emphasized the clear, effective expression of ideas, and no formal grammar was taught. In the other group formal grammar received major emphasis. She found that the thought method produced superior results in sentence structure and required only about 80 per cent as much time as the grammar method.

None of these studies showed a high degree of relationship between knowledge of grammar and writing ability, and most of the investigators concluded that instruction in grammar could not be justified as a means of developing writing ability. However, it should be pointed out that the grammar tests employed were designed to measure ability to verbalize knowledge of grammatical rules and terminology. Consequently, it could be charged that these studies were concerned to a great extent with

---

4. J. D. Clark, "A Four-Year Study of Freshman English," English Journal (College Edition), XXIV (May, 1935), pp. 403-410.

5. Ellen Frogner, "Grammar Approach Vs. Thought Approach in Teaching Sentence Structure," The English Journal, XXVIII (September, 1939), pp. 518-526.

measuring the degree of relationship between writing ability and knowledge of the specialized vocabulary of grammar. In contrast to these studies, the present study provides for measurement of the degree of awareness of syntactic relationships of words in sentences, with no direct use of grammatical terms.

CHAPTER III

DESCRIPTION OF TESTS AND PROCEDURE

In the attempt to investigate the relationships between written composition and knowledge of traditional grammar and between written composition and awareness of structural relationships of words in English sentences, three tests were given to students entering Mount Olive College, Mount Olive, North Carolina, in September, 1961, and September, 1962.

Description of Tests

The three tests used in this study are: (1) Cooperative Sequential Tests of Educational Progress Essay Test, published by Educational Testing Service, Princeton, New Jersey, (2) Iowa Grammar Information Test, published by Bureau of Educational Research and Service, University of Iowa, and (3) "Test of Recognition of Structural Relationships in English," developed by the investigator.

The STEP Essay Tests

The STEP Essay Tests are described by the publishers as "free-response tests of writing ability."[1] The topic which the student is to write about is stated and explained in a short paragraph, and the student is given thirty-five minutes to read the paragraph and write his essay. The performance of the individual student is then evaluated by comparing his

---

1. Cooperative Sequential Tests of Educational Progress, Handbook for Essay Tests, Level 1 (Princeton: Cooperative Test Division, Educational Testing Service, 1957), p. 3.

paper with papers that have already been rated by committees of "experts." The comparison papers are supposed to represent what exists in practice rather than ideal standards.

The stated purpose of the tests is that of "assisting teachers to check their judgments of the ability to write." In addition to this major purpose, other suggested ways in which the tests may be useful include: "Furnishing a basis for comparing free-writing performance of classes, schools, and other groups," and "serving as a basis for class discussion of the criteria of good writing."[2]

The readers who selected the comparison essays were instructed by the test planning committee to score papers on the basis of three factors, weighted as follows: Quality of thought (defined as "the selection and the adequacy of ideas and supplementary details, and the manner of their organization"), 50 per cent; Style (defined as "clearness, effectiveness, and appropriateness, including matters of structure and diction, emphasis, the means of transition between ideas, and the finer points of simplicity, economy, variety, and exactness of expression"), 30 per cent; Conventions (defined as "the proprieties of mechanical form, including grammar and usage, capitalization, punctuation, and the mechanical aspects of the structure of sentences"), 20 per cent.[3]

Since the comparison essays were read twice by the same group of readers, it was possible to obtain a measure of the agreement among the readers' scores. The intra-class correlation (an estimate of the

---

2. Ibid., p. 5.
3. Ibid., pp. 3, 4.

consistency with which the readers rank the students) for Form 1A was .50, and the standard error (standard deviation of scores for a single paper read by a large number of readers) was .85. Since this latter figure is less than one score point in the original units of measurement, it indicates that "at least two out of three readers would score a paper as corresponding to the same sample essay."[4]

Essay test scores are stated in terms of ratings ranging from 1 (the lowest) through 7 (the highest). A converted score is stated for each raw score rating. Converted scores range from 252 to 349 for Form 1A.

The Iowa Grammar Information Test

The grammar test consists of eighty items of the three-option multiple-response type. There are no part scores dealing with separate phases of grammar, and the single score is intended as an objective measure of the student's retention of information about grammar. The test deals exclusively with the materials of grammar as a body of factual information. Robert C. Pooley says the test is "honestly named as a test of grammar information," and he thinks there is every reason to believe "that it measures what a student has assimilated and retained from instruction in formal grammar."[5]

The validity of the test, according to the authors of the test, depends upon the extent to which the items actually sample the total field of grammar information. In the construction of the test, an attempt was made

---

4. Ibid., p. 29.

5. Oscar Krisen Buros (ed.), The Fourth Mental Measurements Yearbook (Highland Park: The Gryphon Press, 1953), p. 304.

to give particular emphasis to the items of grammatical information which were receiving most instructional emphasis in the schools at the time the test was made. Textbook and curricula practice was the guide in deciding which items should be included. Items outside the field of information of most high school students were included in order to secure an adequate range of difficulty.[6]

The specific categories of grammatical knowledge included in the test with the number of items in each are as follows: kinds of sentences, 4; classes of sentences, 3; subject and predicate, 2; parts of speech, 8; antecedents, 2; phrases and clauses, 20; complements, 6; comparison, 3; classification of verbs, 8; tense, 3; mood, 3; person, 3; number, 4; case, 7; gender, 3; independent elements, 2.[7]

Reliability coefficients ranging from .73 to .92 were obtained by the correlation of the odd-even scores on each form of the test and the later stepping up of these values by the Spearman-Brown formula. The lowest reliability coefficient was obtained on seventh grade students. For grades 10, 11, and 12 the coefficients were .89, .91, and .92, respectively.[8]

"Test of Recognition of Structural Relationships in English"

The "Test of Recognition of Structural Relationships in English" was developed by the investigator in connection with his Ph.D. dissertation

---

6. Harry A. Greene and Fred D. Cram, The Iowa Grammar Information Test Examiner's Manual (Iowa City: Bureau of Educational Research and Service, University of Iowa, 1935), p. 7.
7. Ibid., p. 5.
8. Ibid., p. 8.

at George Peabody College for Teachers. The test consists of fifty items of the three-option multiple-response type. It was designed for the purpose of measuring ability to recognize various structural relationships of words in English sentences without use of grammatical terminology. A copy of the structure test is included in the Appendix.

Since the test is concerned with recognition of structural relationships of words in sentences, it seemed desirable to exclude as much lexical meaning from the test items as possible. For this reason nonsense words were substituted for most of the nouns, verbs, adjectives, and adverbs in the option sentences. However, in order to aid in identifying the grammatical relationships to be recognized in the options, English vocabulary was used in the pattern sentences. Since there are few clues of lexical meaning in the option sentences, the persons taking the test presumably have to depend almost entirely on signals of syntactic structure in recognizing the correct options. Normal English word order was retained in the nonsense sentences; English function words (prepositions, conjunctions, articles, auxiliaries, etc.) were used to provide a distinctively English grammatical framework in the sentences; inflectional and derivational affixes were used to provide signals for distinguishing parts of speech.

The basic grammatical relationships of words in English sentences are apparently included in three main sentence elements (subject, predicator, and complement),[9] in four types of syntactic structure (structures of

---

9. Archibald Hill, Introduction to Linguistic Structures, (New York: Harcourt, Brace and Company, 1958), pp. 256-335.

modification, predication, complementation, and coordination),[10] and in cross-reference.[11] The test is designed to include items showing the relationship of headword and modifier, of subject and predicate, of verbal element and complement, of equivalent units in coordinate structures, and of the units involved in cross-reference. These basic relationships are dealt with in traditional grammar books, but books based on structural linguistics were used in identifying the types of items to be included in the test.

The number of items showing each of these relationships was decided upon after checking the relative frequency of various types of structures as indicated in Stormzand and O'Shea.[12] According to their study, which employs traditional terminology, transitive verbs occur approximately three times as often as linking verbs; adverbial clauses have only a slightly greater frequency of occurrence than adjective clauses, and adverbial prepositional phrases are about one and one-half times as frequent as adjectival prepositional phrases; adjectives are about four times as frequent as adverbs; direct objects are about twenty times as frequent as indirect objects and about 120 times as frequent as objective complements; appositives are relatively infrequent in comparison with nouns in subject position and in direct object position.

---

10. W. Nelson Francis, The Structure of American English, (New York: The Ronald Press Company, 1958), pp. 291-366.

11. Harold Whitehall, Structural Essentials of English, (New York: Harcourt, Brace and Company, 1956), pp. 90-118.

12. Martin J. Stormzand and M. V. O'Shea, How Much English Grammar?, (Baltimore: Warwick and York, Inc., 1924), passim.

The structure test includes items designed to test ability to recognize the following types of grammatical structures.

A. Predication—six items (complete subject and complete predicate, 2; simple subject and predicate verb, 4).

B. Complementation—ten items (linking verb and subjective complement, 2; verb and direct object, 4; verb and objective complement, 2).

C. Coordination—four items (coordinate clauses, 2; coordinate nouns, 1; coordinate adjectives, 1).

D. Modification—twenty-four items (main clause and adverb clause, 4; verb and adverb, 2; verb and prepositional phrase, 2; noun and prepositional phrase, 2; noun and adjective clause, 4; noun and object of preposition in modifying phrase, 2; noun and appositive, 2; noun and modifying adjective, 4).

E. Cross-reference—six items (antecedent and pronoun, 2; predicate and predicate substitute, 2; "dummy subject" and subject, 2).

It was not feasible to establish validity of the test by any objective criterion; however, every effort was made to construct the test so that correct responses would depend on awareness of grammatical principles. Although a student may apply traditional terminology in arriving at the correct response, no direct use of terminology is required; and it seems apparent that ability to recognize the relationships involved is necessary to success on the test.

The reliability of the test was established by standard statistical procedures. Preliminary test results were used for item analysis, and unsatisfactory items were revised. The final form of the test was administered to 106 high school seniors and statistical analysis yielded the following data: mean, 24.94; mode, 16; median, 24; standard deviation, 8.72; split-half reliability coefficient (Spearman-Brown formula), .88; inter-item consistency coefficient (Kuder-Richardson formula), .86.

Description of Sample and Procedure

The sample used in the study was the students entering Mount Olive College in September, 1961, and the group entering in September, 1962. The Iowa Grammar Information Test, the STEP Essay Test, and the "Test of Recognition of Structural Relationships in English" were administered during freshmen orientation week at the opening of school in 1961 and 1962. Seven students who missed one of the tests during orientation week were given that test early in the semester.

The 1961 group was composed of 100 students, 58 girls and 42 boys. Three of these students, two boys and one girl, had had some previous college work. The 1962 group was composed of 101 students, 50 girls and 51 boys. Three boys and one girl from this group had had previous college work. Most of the students in both groups were natives of eastern North Carolina and had graduated from high schools located in rural communities or in small towns.

School and College Ability Tests, published by Educational Testing Service, Princeton, New Jersey, were administered to all the students in

the 1961 group except four, two boys and two girls. These tests were administered to all of the 1962 group. SCAT scores ranged from 256 to 327 for the 1961 group and from 268 to 321 for the 1962 group.[13] The percentile band range, based on national norms, was 0-0.5 to 97-99 for the 1961 group and 2-5 to 93-96 for the 1962 group. The median SCAT score for the 1961 group was 287, corresponding to the 16-24 percentile band. The median SCAT score for the 1962 group was 288, corresponding to the 20-28 percentile band. The median score for girls of both groups was 286, corresponding to the 16-24 percentile band, and the median score for boys of both groups was 288, corresponding to the 20-28 percentile band. The median score for both groups was 288.

Age of students at the time of testing ranged from 17 years 1 month to 42 years 2 months; but of the 201 students tested, only 12 were over 21 years of age. The median age was 18 years 6 months. Age range and median age were essentially the same for all comparable subgroups.

The objective tests were scored by use of the keys furnished by the test publishers. The essay tests were graded by two competent English teachers[14] following the instructions provided by the publishers. The two readers scored the essays independently, and an average of the two raw scores for each test was used.

---

13. Correlations between SCAT scores and the other test scores are given in the Appendix.

14. Mrs. Anne Law, English teacher in the demonstration school of Western Kentucky State College, Bowling Green, Kentucky; and Mrs. Edith Vann, English teacher in North Duplin High School, Calypso, North Carolina.

Pearson product-moment correlation coefficients were computed for the inter-correlations of the variables for the total sample and for subsamples divided according to scholastic aptitude and sex. These correlation coefficients were statistically tested to determine whether they differed from zero and whether they differed from one another. The .05 level was used in tests for significance. The data were interpreted in consultation with three professionally qualified consultants.[15]

---

15. Dr. William J. Griffin, Professor of English, George Peabody College, Nashville, Tennessee; Dr. Raymond C. Norris, Acting Dean of Instruction, George Peabody College; and Dr. Howard F. Hjelm, Division of Education, Pan American Union, Washington, D. C.

CHAPTER IV

FINDINGS, CONCLUSIONS, AND IMPLICATIONS

In order to obtain data for comparing the correlation of ability in written composition and awareness of structural relationships with that of writing ability and ability to verbalize knowledge of traditional grammar, correlation coefficients were computed from the scores made by the 201 Mount Olive College freshmen who took the tests employed in this investigation.

The correlations of primary concern were those showing (1) the relationship between scores on the Iowa Grammar Information Test and scores on the STEP Essay Test; and (2) the relationship between scores on the "Test of Recognition of Structural Relationships in English" and scores on the STEP Essay Test. Scores on the School and College Ability Test were used to divide the students according to scholastic ability; national norms were used in establishing ability groups.

The Pearson product-moment formula was used in computing the various correlations, and the coefficients were tested for statistical significance at the .05 level of significance. Correlation coefficients are reported for subsamples divided according to year of administration of tests, sex, and level of scholastic ability.

Presentation and Interpretation of Findings

In Table I on page 20, correlation coefficients of essay test scores with grammar and structure test scores are reported for 1961 and 1962

TABLE I

CORRELATIONS OF STEP ESSAY TEST SCORES WITH IOWA GRAMMAR INFORMATION TEST SCORES AND WITH "TEST OF RECOGNITION OF STRUCTURAL RELATIONSHIPS IN ENGLISH" SCORES FOR FRESHMEN STUDENTS ENTERING MOUNT OLIVE COLLEGE IN 1961 AND IN 1962.

Year	Number of Students	Essay and Grammar	Essay and Structure
1961	100	.47	.43
1962	101	.40	.42
1961 and 1962	201	.42	.39

subsamples and for total sample. The correlations of .42 and .39 for total sample for essay and grammar scores and for essay and structure scores, respectively, are significantly different from zero at the .05 level of significance.[1] However, these correlations are not significantly different from one another at the .05 level of significance,[2] and they do not support

---

1. The formula used for testing to see whether the coefficients differed from zero is

$$F = \frac{r^2 (N - 2)}{1 - r^2}$$

distributed as F with degrees of freedom equal to 1 and N - 2.

2. The formula used for tests of significant difference is

$$t = (r_{eg} - r_{es}) \sqrt{\frac{(N - 3)(1 + r_{gs})}{2(1 - r_{gs}^2 - r_{es}^2 - r_{eg}^2 + 2r_{gs}r_{eg}r_{es})}}$$

which is distributed as t with N - 3 degrees of freedom.

TABLE II

CORRELATIONS OF STEP ESSAY TEST SCORES WITH IOWA GRAMMAR INFORMATION TEST SCORES AND WITH "TEST OF RECOGNITION OF STRUCTURAL RELATIONSHIPS IN ENGLISH" SCORES FOR 201 MOUNT OLIVE COLLEGE FRESHMEN REPORTED ACCORDING TO SEX.

Sex	Number of Students	Essay and Grammar	Essay and Structure
Men	93	.36	.34
Women	108	.40	.36
Men and Women	201	.42	.39

the hypothesis that the correlation between ability in written composition and awareness of grammatical structure is different from that between ability in writing and ability to verbalize knowledge of traditional grammar.

The correlations reported in Table II for subgroups divided according to sex are essentially the same as those for the total sample. The correlations of .36 for men and .40 for women on essay and grammar and of .34 for men and .36 for women on essay and structure are significantly different from zero at the .05 level of significance. The two correlations for men do not differ from one another at the .05 level of significance, nor do the two correlations for women.

The ability groups for which correlation coefficients are reported in Table III on page 22 were established by using the fiftieth percentile score on national norms for SCAT. The .21 correlation for essay and

TABLE III

CORRELATIONS OF STEP ESSAY TEST SCORES WITH IOWA GRAMMAR INFORMATION TEST SCORES AND WITH "TEST OF RECOGNITION OF STRUCTURAL RELATIONSHIPS IN ENGLISH" SCORES FOR 197 MOUNT OLIVE COLLEGE FRESHMEN REPORTED ACCORDING TO LEVEL OF ABILITY AS INDICATED BY SCAT SCORES, USING NATIONAL NORMS.

Level of Ability	Number of Students	Essay and Grammar	Essay and Structure
Upper Half	32	.21	.04
Lower Half	165	.34	.34
Both Groups	197	.42	.39

grammar and .04 correlation for essay and structure for the upper-half ability group do not differ significantly from zero at the .05 level of significance, nor do they differ significantly from one another. The fact that these coefficients are lower than the others may be accounted for by the greater degree of homogeneity and the smaller number of scores included in the subsample. The correlations reported for essay and grammar and for essay and structure for the lower-half ability group are identical (.34). The coefficients for the lower half are significantly different from zero at the .05 level of significance, but they are not significantly different from one another.

Conclusions

The following conclusions are based on the data gathered in this study:

(1) Although positive correlations significantly different from zero exist between writing ability and knowledge of traditional grammar and between writing ability and awareness of syntactic structure, the degree of correlation is not sufficiently high to provide a basis for the assumption that either knowledge of traditional grammar or awareness of basic structural relationships in English will be regularly accompanied by excellence in written composition.

(2) For the total sample of 201 college freshmen participating in this study, the degree of correlation between ability in written composition and awareness of syntactic structure is not different from that between ability in written composition and ability to verbalize knowledge of traditional grammar.

(3) For subsamples divided according to sex and level of scholastic ability, the degree of correlation between ability in written composition and awareness of syntactic structure does not differ from that between writing ability and ability to verbalize knowledge of traditional grammar.

Implications and Recommendations for Further Study

In the following paragraphs an attempt is made to analyze the implications of the findings of this study, and recommendations for investigation of related problems are presented.

Implications

Although the results of this study are in harmony with those of other studies investigating the relationship between grammatical knowledge and communication skills,[3] few English teachers are likely to be satisfied that awareness of syntax is not an important factor in written composition. It seems impossible that a student who is unaware of the basic grammatical relationships of words in English sentences could master the most elementary writing skills. Why then do statistical investigations fail to reveal a high degree of correlation between writing and the various aspects of grammatical knowledge? The answer to this question may be related to the nature of the tests used to measure the variables under consideration.

The limitations of the traditional grammar test are obvious. The student must master a specialized vocabulary in order to respond to these tests. Furthermore, the tests are likely to contain a large number of items that are unrelated to functional use of the English language. Consequently, the student may have an adequate working knowledge of the language without having mastered the technical vocabulary and rules which he must know in order to succeed on a standardized test. These same limitations are not quite as obvious for the structure test used in this investigation, yet similar limitations may exist.

---

3. Cf. studies reviewed in Chapter II, also the writer's unpublished Ph.D. dissertation, "The Relationship Between Awareness of Structural Relationships in English and Ability in Reading Comprehension," George Peabody College for Teachers, 1961. In the latter study the correlation of structure and reading comprehension was found to be .44.

Although a student may have a functional knowledge of the basic structure of English, he may find it difficult to respond to any objective test designed to measure this knowledge unless he has learned some kind of grammatical nomenclature. While it is true that the structure test was constructed to include basic structural relationships identified in the literature of structural linguistics, it should be pointed out that these same basic relationships are dealt with in traditional grammar. Even though the test makes no direct use of grammatical terminology, either traditional or structural, it may be that the student responds in terms of whatever grammar he has been taught. If he has been taught traditional grammar, as the students who participated in this study had been, he may apply traditional grammatical terminology in his reasoning as he attempts to find a correct response.

Since nonsense vocabulary is used in the option sentences, it seems evident that the student must be aware of structural clues, such as word order, inflections, function words, etc., if he is to respond successfully to the test items. However, in identifying the structure indicated in the pattern sentence, he may of necessity have to apply what he knows about traditional grammar. If this is true, awareness of structural clues alone may not permit successful performance on the test.

The content of the essay test should also be considered. It is weighted heavily on "quality of thought" (50 per cent) and "style" (30 per cent). "Conventions" counts only 20 per cent on this test, yet this category is the one with which both the grammar and the structure

tests are primarily concerned. The fact that 80 per cent of the content of the essay test is concerned with material not clearly and immediately related to the content of the other tests may explain why high correlation coefficients were not obtained.

Furthermore, the objectivity of the essay test is obviously limited. The publishers claim that at least two out of three readers will score a paper as corresponding to the same sample essay, but this still leaves room for considerable variation. Yet, in spite of these obvious limitations, the STEP essay tests appear to be more objective than any other writing test available.

In the light of these considerations, it is difficult to state the implications of this study with certainty. Although the findings do not indicate a high degree of relationship between ability in written composition and various aspects of grammatical knowledge, they can hardly be interpreted as proof that such relationship does not exist.

Whether a student can or cannot successfully respond to a test designed to measure awareness of grammatical structure, it seems evident that awareness of basic structure is essential to elementary written composition. However, it should be kept in mind that ability to compose grammatically correct sentences may not guarantee excellence in written composition. "Selection and adequacy of ideas and supplementary details, and their manner of organization" are important factors in the evaluation of any composition, as are "Clearness, effectiveness, and appropriateness" (Cf. Chapter III, p. 10). Basic though the proprieties of mechanical form

and the mechanical aspects of the structure of sentences may be, it remains to be shown that they are regularly accompanied by excellence in quality of thought and style.

Recommendations for Further Study

(1) This study indicates that essentially the same degree of relationship exists between ability in writing and awareness of syntactic structure as exists between ability in writing and ability to verbalize knowledge of traditional grammar. It would be useful to know the degree to which writing ability is related to awareness of structure before knowledge of grammatical terminology is acquired. A study designed to investigate this problem would involve elementary school pupils who have not been instructed in grammatical terminology. An elementary composition test and a modified form of the structure test could be used in the investigation.

(2) Although the literature of structural linguistics was used in identifying the basic relationships included in the structure test, no experimental teaching to determine relative effectiveness of different instructional approaches was done in this study. It would be worthwhile to know whether the teaching of structural linguistics is more, or less, effective than the teaching of traditional grammar in developing awareness of basic syntactic relationships in English. Experimental and control groups could be established to compare relative effectiveness of the two instructional approaches.

(3) The structure test used in the present study is concerned only with basic syntactic relationships. Obviously, more complex structural relationships are important in written composition. A test to measure awareness of complex relationships would make it possible to further investigate the problem stated in this study, and the development of such a test would be a valuable contribution to this area of knowledge.

(4) Since style and quality of thought are important factors in written composition, it would be useful to know the degree of relationship existing between these factors and mechanical correctness of sentence structure. The pioneer work of Sumner Ives in analysis of style might serve as the basis for a study in which definite elements of style are identified and in which the correlation of these elements and elements of mechanical correctness is investigated.

TABLE IV

INTERCORRELATIONS OF SCORES ON COOPERATIVE SCHOOL AND COLLEGE ABILITY TESTS; COOPERATIVE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS, ESSAY; "TEST OF RECOGNITION OF STRUCTURAL RELATIONSHIPS IN ENGLISH"; AND IOWA GRAMMAR INFORMATION TEST FOR 197 MOUNT OLIVE COLLEGE STUDENTS

	Essay	Structure	Grammar
SCAT	.40	.36	.66
Essay	—	.39	.42
Structure	—	—	.56

APPENDIX

TABLE IV

INTERCORRELATIONS OF SCORES ON COOPERATIVE SCHOOL AND COLLEGE ABILITY TESTS; COOPERATIVE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS, ESSAY; "TEST OF RECOGNITION OF STRUCTURAL RELATIONSHIPS IN ENGLISH"; AND IOWA GRAMMAR INFORMATION TEST FOR 197 MOUNT OLIVE COLLEGE STUDENTS

	Essay	Structure	Grammar
SCAT	.40	.56	.66
Essay	—	.39	.42
Structure	—	—	.56

TEST OF RECOGNITION OF STRUCTURAL RELATIONSHIPS IN ENGLISH

Devised by

Roy C. O'Donnell

Mount Olive College

Mount Olive, North Carolina

Copyright, 1961, by Roy C. O'Donnell

Introduction: This is a test of your ability to recognize the various ways words in a sentence are related to one another. In the sentence, "My best friend sent me a letter," best is related to friend in a special way. Also, sent is related to me in a special way; it is related to letter in a different way; and it is related to friend in still another way. When we substitute nonsense words for the key words in the sentence, we hide the meaning of the sentence, but we do not change the relationships of the words. For example, in "My lengest amikus solted me a mistove," lengest is related to amikus in the way that best is related to friend in the preceding example. Likewise, amikus is related to solted in the same way that sent is related to letter. Nonsense words are used in this test.

Directions: In each of the following groups of sentences, you are to select the sentence (A, or B, or C) in which word 1 is related to word 2 most nearly as word 1 in the pattern sentence is related to word 2 in the pattern sentence.

Example:

x1. (Pattern Sentence) Roosevelt (1) fought (2) in the Spanish-American War.

A. The three berls (1) ergled (2) in the same fostle.

B. She is the alpest (1) garsil (2) in the skaver.

C. Our dalkoss was mandering (1) his barstles (2).

Sentence A should be selected as the correct response because berls is related to ergled in sentence A in the way that Roosevelt is related to fought in the pattern sentence. Mark option A on the answer sheet as the correct answer for x1.

In some of the sentences a group of words is underlined. In these items you are to select the sentence in which the group of words is related to the other underlined word or group of words in the way indicated in the pattern sentence.

Example:

x2. (Pattern Sentence) My uncle is building (1) a new house (2).

A. His vivest mirtess (1) is a very perful birtle (2).

B. The ilbid (1) nubbled (2) on the nince during the gamis.

C. The carfer is nilting (1) a lirtish caspil (2).

Sentence C should be selected as the correct response because is nilting is related to a lirtish caspil in the way that is building is related to a new house in the pattern sentence. Mark option C on the answer sheet for x2.

Do not begin until the starting signal is given by the examiner. Do not mark the test booklet. Indicate all answers on the answer sheet. If you finish before time is called, wait quietly.

1. The woman (1) whose husband bought our car had (2) a wreck yesterday.
   A. Everything inted kobishly after the askor that mished the presdon (1) had naded (2).
   B. The artol (1) that had been geebling the urbos wegged (2) the nimpre on the trozzer.
   C. The hosker with the craggons (1) who is biffling (2) the dramper will soon be dromcost.

2. It (1) was a late hour (2) when he came in last night.
   A. When the gosper mandled the cassop, it (1) was an avish dager (2).
   B. The cabbler who gurbled it (1) was a kalish carmboler (2).
   C. The marpil that boggled it (1) was a scurby magos (2) with scovy hangils.

3. Glass windows (1) were introduced (2) into England in the eighteenth century.
   A. The gooma opting the fringles (1) had moppled (2) the unstergol.
   B. After darplin a plose, the namkop (1) was burged (2) by a sclubber.
   C. An ignormous (1) nomper scottled (2) in while the gluger was endarpling the norble.

4. Paragraphs (1) seldom run (2) to more than two or three hundred words.
   A. The aldish lollboon perkled (1) the fleem (2) on the rantash.
   B. A boiner (1) on a fibbernit (2) was drigging the leskle with a krobe.
   C. The crebulous nebber (1) bargled (2) rebegously while the goomp dibbled the kobit.

5. Mrs. Wilcox made (1) the hungry tramp (2) a sandwich, and then she put him to work.
   A. The uggler who gave (1) the rokel (2) a blathim wathed ungubily that the dragerts had scobbled it.
   B. The stuttle being (1) tralic (2), we bardled to get a listwick.
   C. The arkil had (1) a boffish wifter (2) and a macklir.

6. The one (1) who laughs last (2) often laughs best.

   A. An ungormous twesner (1) that baikels meediiy (2) alds the baffer.

   B. The yestolers will inkwile (1) who the proskels are (2).

   C. Those grestors melk (1) whoever orngoses them (2), and they are not harbled.

7. In my opinion, he is either extremely cunning (1) or completely mad (2).

   A. Most of the enskils are either waffish (1), tiffish, or moffish (2).

   B. If the ather govers the ankerds (1) or hivers the maffish (2) alkobes, the anle will erg.

   C. The kosivler either crabbles (1) the konsters or mongles the onsters (2).

8. Figures (1) vague (2) and shadowy were seen leaving the darkened building.

   A. Down the arsteds (2) frappled (1) the lippol whisting a poser.

   B. The dagful (2) pleskers (1) made the debbon mappive.

   C. The miskoller (1) icitly (2) wanded to the wiktor when he heard the crober.

9. Professor Walton received (1) an unabridged dictionary (2) from a former student.

   A. One of the wiffiest moskols in the proskomp aggled (1) the quisnik of the omst (2).

   B. The onfig in the koslum mappled (1) the miklest kunzib (2).

   C. Your onkosper iggled (1) one of the hugliest julkops (2) in the grosvemp.

10. Our boys have had better training (1) than theirs have (2).

   A. Some of the tendils have blivish holters (1), and some have (2) maldish carbils.

   B. You have been madling leppets (1) longer than the gruppler has (2).

   C. If the normels have glibed (1) their berfels, the dermers will have (2) to rult.

11. That he was even there (1) has not been proven to my satisfaction. (2)

A. Into the ormber (1) aggled the krebbler with his grandol in his norp. (2)

B. The gumble that scattled the multer (1) fandled the inhuster. (2)

C. Some of the wathers there should (1) have limbled the digrosser. (2)

12. In 1861, Lincoln (1) appointed (2) Howells consul at Venice.

A. In the Karbonesians (1) we bingled (2) many baloskins.

B. After the dringles (1) had been (2) miggered, the ditwip became murtical.

C. The biktross (1) in the wabe sorbbled (2) mathefully.

13. They are the people (1) I referred to in my lecture. (2)

A. The rokly wamtupper (1) maffled at the anskor. (2)

B. The albis (1) he rampled from the gransel (2) was a wanvil.

C. The gwilnos waped the wiskol (1) what the windrus was. (2)

14. Loud noises alarmed (1) them (2) in the middle of the night.

A. The fledder is going to wheeg when the boiner (1) argles (2) the amkolter.

B. A somewhat stofey boskin bargled (1) the niffy hamkin (2) in the thond.

C. The ishful rollopash in the biffy thind (1) twished (2) wibfully.

15. She called it hot (1) tea (2), but my cup was stone cold.

A. The magord (1) andled (2) on the idgeber, having ustered the ethwor.

B. The baik spaled in the dragered (1) was crageful. (2)

C. The desicy (1) tankeen (2) was the only plemant the odker had.

16. Milton's father is the man (1) who was erroneously arrested. (2)

A. The kenifer (1) whose morgil was dolpest (2) was a calliver.

B. A bergum asked the feriss (1) who he would get to lell the tabbil. (2)

C. One of the korsans told his graspils (1) who to worvil for. (2)

17. Matson went to sleep (1) while the professor was talking about the (2) importance of being alert.

A. An urbish oddler gibbled at the ralcote (1) but could not gripple it. (2)

B. When the veemer trabbled in, (2) the dinwid was sondering monishly. (1)

C. Every domlit in the kolper burtled (1) after the frappish westler. (2)

18. The opinion of the majority is (1) his opinion. (2)

A. The magord of the ethwor became (1) the mogard of the othwer. (2)

B. Usually the dilger who is (1) bargest scrobbles the moggest. (2)

C. Some of the infrels were (1) gavling ildkins (2) and torling inkordons.

19. The noises suddenly (1) ceased (2) and there was an unusual stillness.

A. The bactose debbered the woffish krebbler (2) harfully. (1)

B. As the grutious donkle arbled by, the arpil (2) rakkled wheefully. (1)

C. The ditler birtled the flamper mirtally, but the flamper didn't skweeble.

20. The water is pure (1) because it comes from artesian wells. (2)

A. The nerbler stated (1) why his wilhover was not trindled. (2)

B. The verndis was nappled (1) when the askor orbled through the mande. (2)

C. This is the mittler (1) that gimmled his wersters away. (2)

21. In the center of the table sat a wooden bowl which Sam had carved (1) with his hands. (2)

A. Having warpled (1) to the pontler of the ferbus (2), the mosker flaned.

B. At the apert of the irndish milport rangles (1) a muffish pilder (2).

C. The biktotler sirbled (1) to the balkird (2) mithfully.

22. George saw me (1), but he pretended not to recognize me (2).

A. All the unfirdles (1) but one hindler had been seppled (2).

B. The spalker has not gorded (1), nor has he bindled (2).

C. When the monder doggers in (1), the norbil will rabble his grivel (2).

23. Last summer my father took (1) me on a camping trip (2).

A. The konplasser had orvled (1) in and mandled (2) the ezler.

B. A gartel whabbed (1) the momper after gebbling his erbis (2).

C. The briktol acobbered (1) the hustol mathfully with a debrole (2).

24. The speeding automobile swerved (1) suddenly (2) and headed toward the ditch.

A. A drang spaled (1) very cobfully (2), but the wathe did not swinch.

B. The ignormous stoon (1) quibbered (2) the stuttles with grondakses.

C. Apparently the grutious wath had dwatted the wiffish granflap (1) ungubily (2).

25. The works of Milton cannot be understood unless the mind (1) of the reader cooperates with that (2) of the writer.

A. When logots (1) become lappered, they (2) are sometimes outgrammeled.

B. Toshing for the skwanchers (1), the narvil grospod frambled his (2) olgos.

C. The wathler (1) grobed furvishly that (2) the bandler was a nerbal drope.

26. South Carolina vigorously opposed (1) the payment (2) of duties in the tariff of 1832.

A. While the mintove gebbled (1), the indels (2) arggled moisily.

B. If the awkos is iggling the idger, why doesn't (1) the idger (2) scottle?

C. Wakilors usually abble (1) imperkers (2) when chirneys are whistering.

27. My brother (1) John (2) is a research chemist.

A. The kakly (1) birlom (2) febbled the larrub.

B. The ilifog (1), a nilbose (2), was blinging a kossermol.

C. The stebolt (1) spanging (2) on the ankold is my gramflap.

28. That stingy old man allowed (1) me (2) only five dollars for expense.

A. The wiffish inglost whilked (1) a kwinst (2) of bavits.

B. When the wilkost is a konlober, the pilgest (1) istles (2) the miskoper.

C. The sidkollers were the milgossers that gave (1) the wurter (2) its olkopes.

29. Candler plays golf (1) as well as Dodson does (2), if not better.

A. The drepple bartles (1) the wincle but does (2) not make it grolish.

B. Chirndels brackle (1) better than firnels do (2).

C. Molpers sirtle (1) they can nubble kompers as well as the brattle does (2).

30. If you return the money (1), we will not tell the police (2).

A. The winkovs had mindled to kood for bishels (1), but the grilde was too koovish (2).

B. Millygows should be spanged and flebbed (2) before the smays begin to kosp (1).

C. Grospof mones the doft rather bivishly (1); he used to geeble the dosher (2).

31. I find it easy to get along without a car (1) because I like to walk. (2)

A. The angord faldered his last morfel (1) while he was savering his dirfels. (2)

B. Why did the chirkle deebil his drostels (1) with arpish monels? (2)

C. Some of these andrils are grutious and stivish, (1) but others are simply bovish. (2)

32. The thyroid controls the vital (1) processes (2), collectively called metabolism.

A. The rabash (1) wibfully (2) grigged the stuttling fleemer.

B. The grafer from the moiner (1) bingled (2) the stine another kineb.

C. The whiffish (1) sumtoshes (2) were sobbering in their grapkins.

33. Duncan's place (1) in the ranks (2) has been filled.

A. The kilbos rakkled wubtully (1) at the likose. (2)

B. All the vimpers (1) on that rendon (2) were mibbered when the loobil snibed.

C. The crandon hampled (1) to mandle (2) the nobber with a lomper.

34. The town itself is perched (1) on the slope (2) of a very high mountain.

A. The fribash twippled (1) so nerbally in the wigrams (2) that the barmip couldn't grep.

B. Up the airstel the magirp trippled, swipping mavishly (1) on his bacle. (2)

C. Those wandrils in the kupla (2) were miggered (1) by the aptils.

35. The new secretary is an intelligent (1) and dependable person. (2)

A. Abishly (1) and wippishly the dummerlipe (2) darbled the winhoffers.

B. Dibbling (1) kipers and gerpers (2), the kirndil hibbled through the karves.

C. Into the omber birkled the irvish (1) rinkin (2), ribbling as he birkled.

36. The commanding officer called my uncle a hero.
    (1) (2)

    A. The constile considered the kilbose an unkompish mordon.
       (1) (2)

    B. An aftish scallison made his tronkater some moskils.
       (1) (2)

    C. After the twasnel mangered him, he became a malgus praskel.
       (1) (2)

37. There was a pause in the conversation after his emotional outburst.
    (1) (2)

    A. The ditwap rinding there was a milgose with a bonkoff.
       (1) (2)

    B. When the kilkoss had wangled the voer, there was a nilgy braskol.
       (1) (2)

    C. A ginposser with a loonis was there when the elbis iggled in.
       (2) (1)

38. Father looked steadily at me while I told my side of the story.
    (1) (2)

    A. The wandrils in the kopla miggered the optils.
       (2) (1)

    B. The elpis erggled the aldish ginposser with a loomis.
       (1) (2)

    C. When the aptan eppled into the aitle the krus endled.
       (1) (2)

39. His car is the one that was used in the rescue operations.
    (1) (2)

    A. That the onsebber had knobbled his chirpos was moffible.
       (2) (1)

    B. The andiffer rimpled that he was not a marbus.
       (1) (2)

    C. The same mippler that the barsil had was pargled at the havel.
       (1) (2)

40. He always spends his money before he gets it.
    (1) (2)

    A. Binkles that have provlids are often too mlon to befril them with bleeners.
       (1) (2)

    B. The binly rishof spanding by the boosh is the one that glinged the bownall.
       (1) (2)

    C. The luness toshed the stootler and bickily hargled it.
       (1) (2)

41. The committee made (1) John chairman (2), but he refused to serve.

A. The idgir alkining (1) the owkos neebled (2).

B. After drobbling the frillip, the magive became (1) murtical and sibbered (2).

C. The edler of the blather thought (1) the waff's ontok a misglot (2).

42. Kinston's grandfather started the business with nothing but a shop (1) and some tools (2).

A. The ankerl (1), the oikle, and the donkle (2) were waggering through the slane.

B. An uffish kanster moggled to the drafer (1) and saggled (2).

C. The grathful minlopper (1) and the wuffish (2) antwile buggled the firstilor.

43. The remainder (1) of the week (2) passed very pleasantly.

A. The weefos grifed to wike the troster (1) to the neegil (2).

B. Out of the silpos there meegled a dostor (1) with jiber loofers (2).

C. The grister (1) kilibed with a lapekubos (2) for two fages and then delostigated.

44. A stranger came to the desk and asked the number (1) of your room (2).

A. The niklar snabbed plashily (1) on the ringol (2).

B. His only dobuse was an enplex (1) in the arbuse (2).

C. The mitros flabbed his scober (1) to the druggard (2) and scamed.

45. The professor recommended (1) an excellent book on foreign policy (2).

A. The lipe frebbed (1) away to greep a fringler (2).

B. A murtical liaper in this desker (1) flebs his skimber to the stomber (2).

C. The trabstofer flerbered around, wegged (1) his dopterl (2), and uggled to the flome.

46. Living there (1) is an experience I would gladly forgo. (2)

A. Weel the arapaf to drifen the argils (1), dirgizing mirtally as you weel (2).

B. After fringle doggered in, the dipwit who (1) gave us our dron drobed the roke (2).

C. A mackle who kondoshes norsils (1) sometimes kebbles the feppers (2).

47. Take time to organize your theme (1), and pay attention to paragraphing (2).

A. Some koblods are narn marly (1); some become marly by ergert (2).

B. Your nilkob has no chiveness (1) and no risness in the fribe (2).

C. The kwisnove said he would be at the twisnet (1), but not in the blasned (2).

48. The recruits (1) in the new regiment (2) watched and waited fearfully.

A. When the rinsker ingled the trendle, he alted to the wafter (1) in the byglip (2).

B. The oskot rundled unscadily (1) in his targils (2).

C. The outwend delangs (1) on the saggly (2) onforst that mindles the arpall.

49. We must educate the masses today, for tomorrow they may be (1) our masters (2).

A. Sonnification is (1) the degose of innivling dambles with arvish mavelistics (2).

B. If the flamstofer becomes presdone, maybe (1) he will karvil the vastron (2).

C. The alkost may be (1) aldering (2) the istor with his ilbiker.

50. Mrs. Carson's brother (1), a doctor (2), was there when the attack occurred.

A. An arpit (1), a kostil (2), and a megros were swalting their briffles.

B. The dravler (1), an ilvish (2) gospover, had mandled the burdle with a brul.

C. When the narfil (1), a mullish oldifer (2) with no harsils, had cambled his tralts, he mittled his crables and scomed.

BIBLIOGRAPHY

BIBLIOGRAPHY

Books

Buros, Oscar Krisen (ed.). The Fourth Mental Measurements Yearbook. Highland Park: The Gryphon Press, 1953.

Francis, W. Nelson. The Structure of American English. New York: The Ronald Press Company, 1958.

Fries, Charles C. The Structure of English. New York: Harcourt, Brace and Company, 1952.

Hill, Archibald. Introduction to Linguistic Structures. New York: Harcourt, Brace and Company, 1958.

Stormzand, Martin J., and M. V. O'Shea. How Much English Grammar? Baltimore: Warwick and York, Inc., 1924.

Whitehall, Harold. Structural Essentials of English. New York: Harcourt, Brace and Company, 1956.

Periodicals

Asker, William. "Does Knowledge of Formal Grammar Function?" School and Society, XVIII (January 27, 1923), 109-111.

Clark, J. D. "A Four-Year Study of Freshman English," English Journal, (College Edition), XXIV (May, 1935), 403-410.

Frogner, Ellen. "Grammar Approach Vs. Thought Approach in Teaching Sentence Structure," The English Journal, XXVIII (September, 1939), 518-526.

Hoyt, Franklin S. "Grammar in the Elementary Curriculum," Teachers College Record, VIII (November, 1906), 467-500.

Rapeer, Louis W. "The Problem of Formal Grammar in Elementary Education," Journal of Educational Psychology, IV (March, 1913), 125-137.

Pamphlets, Tests, and Unpublished Materials

Cooperative School and College Ability Tests. Princeton: Cooperative Test Division, Educational Testing Service, 1955.

Cooperative Sequential Tests of Educational Progress Essay Test, Form 1A. Princeton: Cooperative Test Division, Educational Testing Service, 1957.

Cooperative Sequential Tests of Educational Progress Essay Test, Handbook for Essay Tests, Level 1. Princeton: Cooperative Test Division, Educational Testing Service, 1957.

Greene, Harry A., and Fred D. Cram. *The Iowa Grammar Information Test Examiner's Manual*. Iowa City: Bureau of Educational Research and Service, University of Iowa, 1935.

Iowa Grammar Information Test for Junior and Senior High Schools, Form A, devised by Fred D. Cram and H. A. Greene, Iowa City: Bureau of Educational Research and Service, Extension Division, University of Iowa, 1935.

O'Donnell, Roy C. "The Relationship Between Awareness of Structural Relationships in English and Ability in Reading Comprehension." Unpublished Ph.D. dissertation, George Peabody College for Teachers, 1961.

"Test of Recognition of Structural Relationships in English." Constructed by the investigator and included in the Appendix, 1961.